Appln. No. 09/749,480   IBM Docket No. BOC9-1999-0084
Amendment dated July 14 2005
Reply to Office action of Mar. 9, 2005
Docket No. 6169-141

REMARKS/ARGUMENTS

These remarks are made in response to the Office Action of March 9, 2005 (Office Action). As this response is filed after the 3-month shortened statutory period along with an appropriate fee and a petition for an extension of time.

In paragraph 2 of the Office Action, claims 1, 3-12, and 14-25 were rejected under 35 U.S.C. § 102(e) as being unpatentable over U.S. Patent No. 6,029,214 to Dorfman, et al. (Dorfman). In paragraph 4, claims 5 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dorfman in view of U. S. Patent No. U.S. 6,411,283 to Murphy (Murphy).

I.   Claim Amendments

In response to the Office Action, claims 1, 3, 4, 6, 7, 12, 14, 15, 17, 18, 22, and 23 have been amended to clarify various disclosed aspects of the present invention. More specifically, claims 1 and 12 have been amended for clarity so as to avoid the use of "or" within the determining step. Claims 1 and 12 have also been amended to emphasize that the detection system can implement one or more procedures having different implementation particulars depending upon the determined contact type, as supported by page 17, lines 4-12, page 21, lines 4-6, between page 20, line 3 to page 21, line 19, and throughout the specification.

Claims 3 and 14 have been amended to emphasize that different visual interfaces are implemented for finger contact and for stylus contact, as supported by page 12, lines 14-22 and by page 31, lines 19-20. Claims 4 and 15 have been amended to emphasize that handwriting recognition software can be automatically enabled when the detected contact type is a stylus contact, as supported by page 17, lines 5-12 and by page 20, lines 17-19. Claims 6 and 17 have been amended to clarify that duration of a contact can be used to determine whether the contact was intentional, as supported by page 12, lines 8-9.

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Claims 7 and 18 have been amended to clarify that durations of two contacts can be used to determine whether a double-click event occurred, as supported by page 12, lines 10-13. Claims 22 and 23 have been amended to clarify that contact types for which contact criteria exists include stylus contact, finger contact, and accidental contact, as supported by page 15, lines 10-18. Claim 11 was amended to correct a transcription error so that when a finger contact is determined, the detected contact is interpreted as a finger contact (not as a stylus contact as previously stated).

No new matter has been added.

II.   Overview of Applicants' Claimed Invention

Prior to addressing the rejections on the art, a brief review of the Applicants' invention is appropriate. The Applicants have invented a method and apparatus for distinguishing between a finger and a stylus using a touchscreen based upon contact area. The method does not require feedback from peripheral devices external to the touchscreen, but instead relies exclusively upon touchscreen contact size information as compared with contact criteria. Accordingly, the method is able to be implemented using software and/or firmware and standard hardware, requiring no expensive hardware modifications and/or cumbersome peripherals. Using the stylus/finger determination, one or more procedures tailored for the contact type can be automatically implemented. The automatically implemented procedures can include a pause strategy, offsetting an on-screen pointer, displaying an activated point beneath the detected contact, automatically enabling handwriting recognition software, and presenting a user interface tailored for the determined contact type.

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III.   Dorfman Fails to Anticipate the Claimed Invention

Claims 1, 3-12, and 14-25 were rejected under 35 U.S.C. § 102(e) as being unpatentable over Dorfman.

A. Overview of Dorfman

Dorfman teaches an enhanced touchpad or input tablet, which is an input mechanism for a computing device. According to Dorfman, an area of the input tablet can be segmented, each segment can be associated with user or application defined programmatic actions. The input tablet can be configured in either a relative or absolute mode. Relative mode permits activities in one segment to "influence" coordinate data when a pointer is within another segment. Absolute mode provides coordinate data that is not "influenced".

For example, if an input pointer was initially placed within a first segment, then moved to a different segment without the pointer leaving contact of the input tablet, then the first segment can "influence" the coordinate data.

Some aspects within the Office Action for which Dorfman is referenced do not appear to be supported by cited references. Some of these aspects, however, are still present within other places of Dorfman. Others of these aspects do not appear to be supported by Dorfman.

Column 10, lines 23-64 fails to teach specifying a size of the detected contact, and instead describes steps of dragging an element from a palette to a workspace. Column 11, lines 16-24 fails to teach comparing contact information with contact criteria, and instead describes a method for inputting Japanese characters. FIGS. 6E-6F do not teach discriminating between a finger and a stylus, and instead includes graphics of both a finger and a stylus showing both can be used, but fails to mention anything about discriminating between the two.

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Column 3, lines 58-65 of Dorfman does, however, include teachings that Dorfman can distinguish whether a finger or a stylus was used with an input tablet. Additionally, column 12, lines 8-19 of Dorfman teach that a determination between finger contact and stylus contact can be made based upon the number of "pixels" activated and/or the pressure exerted on the pixels.

Dorfman does not appear to support the asserted teachings (claims 6 and 7) relating to detecting a duration of contact. Column 7, lines 16-43 are cited for this teaching. The referenced lines discuss movements relating to relative mode and absolute-mode between different segments of the input tablet. The referenced lines also discuss scaling the screen interactions based on the size of the input pad. The scaling can take acceleration into account, where rapid acceleration on the input pad can indicate a greater scaled movement on the display screen. No mention of temporal aspects of contacts is included in this section, or in any other portion of Dorfman. Dorfman lacks this teaching.

Dorfman does not appear to support the asserted teachings (claim 8) relating to displaying an activated point in the touchscreen beneath the detected contact. Dorfman does not teach a touchscreen or any touchable input device that also provides a display. Referenced teachings discuss adding some overlay (visual or tactile) to distinguish the segments (defined and used by Dorfman) of an input pad. Dorfman discusses placing an overlaying template on top of the input device, similar to keyboard overlays for different applications that show the function keys specific to those applications. Dorfman fails to teach displaying an activation point beneath the detected contact. Similarly, Dorfman fails to teach claim 10 for the same reasons.

B. Dorfman Is silent regarding Touchscreens

Dorfman fails to provide teachings directed towards a touchscreen, as claimed by the Applicants. A touchscreen serves as both display and input device. A touchpad or

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input tablet is a separate peripheral device from the display screen (just as a mouse and keyboard are separate input peripherals from the display screen). The surface area, sensitivity, restrictions, configurability, tactile sensations, electrical couplings, and the like, are very different between touchpads, input tablets, and touchscreens. Since each claimed limitation must be EXPLICITLY or INHERENTLY taught for a § 102(e) rejection to be properly asserted, and since Dorfman fails to explicitly or inherently teach a method applied to touchscreens, the § 102(e) rejections to the claims fail on this basis alone, and should thusly be withdrawn.

C. Dorfman Fails to Teach Other Claimed Limitations

Dorfman teaches that a touchpad or input pad can be segmented and that different programmatic actions can occur based on the segment in which input was received. Dorfman fails to teach (1) a pause strategy, (2) offsetting an on-screen pointer, (3) displaying an activation point beneath a contact point, (4) **automatically** enabling handwriting recognition software based on the contact type detection, and/or (5) tailoring a interface based on the contact type (one GUI view for finger touchscreen input that may have bigger fonts/buttons for easy selection, and another GUI view for stylus touchscreen input).

Referring to claims 3 and 14, Dorfman fails to implement different visual interfaces within the touchscreen for finger contact and for stylus contact.

Referring to claims 4 and 15, Dorfman fails to teach that handwriting recognition is automatically enabled when the detecting step indicates a contact type is a stylus contact. Dorfman actually provides conflicting teachings that a version of handwriting recognition is implemented for both a finger and stylus (slightly different versions for each), where the Applicants only teach it for a stylus contact, which is why the automatic handwriting can be implemented only when stylus contact is detected.

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Referring to claims 6 and 17, Dorfman fails to teach detecting a duration of contact that is used to determine if contact was intentional.

Referring to claims 7 and 18, Dorfman fails to teach that durations of two contacts can be used to determine an occurrence of a double-click event.

Referring to claims 22 and 23, Dorfman fails to teach that contact criteria can be established for accidental contact.

Claim 11 includes the following limitations not taught by Dorfman (1) offsetting an on-screen pointer, (2) detecting a duration of contact between a first and second contact, and (3) displaying an activated point in the touchscreen beneath the detected contact.

For all of the above reasons, Applicants respectfully request that the 35 U.S.C. § 102(e) rejections to claims 1, 3-12, and 14-25 based on Dorfman be withdrawn.

IV.   Murphy Fails to Cure the Deficiencies of Dorfman

Claims 5 and 16 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Dorfman in view of Murphy.

A. Overview of Murphy

Murphy teaches an enhancement to a computer touchscreen that facilitates the selection of features at the edge of the screen. Murphy solves the problem that when a finger touches an item located near the edge of the screen, the touchscreen only detects a portion of the finger contact with the screen. Conventionally, the "center" of the contact was used as the center for input focus. This can be problematic, when the user intended the center of input focus to be the center of his/her finger.

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In one aspect of Murphy, a cursor can appear a distance from the touched point of contact. The cursor can appear a predetermined distance R from the contact point so that a user can see the cursor.

B. Dorfman and Murphy are Not Properly Combinable References

Dorfman's teachings pertain to segmenting an input device and/or touchpad to simulate the segments of the display screen. As noted at column 6, lines 52-67 of Dorfman, Dorfman segments a touchpad into a logical segment corresponding to the desktop 50 and into a logical segment corresponding to a menu area. Input within the touchpad for the desktop logical segment is treated as desktop input and for the menu area segment as menu input.

These teachings (which are the claimed teachings of Dorfman) do not make sense when a touchscreen (not mentioned by Dorfman) is used instead of a touchpad. A user of a touchscreen has no disconnection between a display and the touchpad and no virtual segmentation is needed. A user simply touches the screen to make a selection. Hence, any modification of Dorfman that alters Dorfman's input from a touchpad or input pad to apply to a touchscreen, renders the actual purpose and teachings of Dorfman meaningless. Pursuant to MPEP 2143.01, a proposed modification cannot render the prior art (Dorfman) unsatisfactory for its intended purpose and/or cannot change the principle of operation of a reference.

Additionally, no suggestion to combine the references (even though both relate to "touch input") is present when viewing the references in context of their respective teachings. That is, Murphy relates to the problem of "on edge" selections of a touchscreen, which is not problematic with touchpad or input pad type input. In fact, it is common to "scroll" a display pointer by making a sideways gesture with a finger on a touchpad, which can exceed the boundaries of the touchpad. Attempts to "center" or

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refocus a touchpad contact when a finger is near the edge, does not make sense. As previously noted, the problem solved by Dorfman and the specific (and claimed) techniques used to solve the problem do not translate to a touchscreen. Hence, one of ordinary skill in the art would not combine teachings of Dorfman with Murphy, as both references teach away from such a combination and as the purpose of neither invention is furthered by such a combination.

C.   Murphy, Dorfman, and Combinations Thereof Fails to Teach claimed Limitations

Regarding claim 5, Dorfman does show that it is possible to discriminate between finger and stylus touches on a touchpad. Murphy does teach that it is possible to offset a cursor within a touchscreen for finger input. However, Murphy, Dorfman, and combinations thereof fail to teach that the offsetting of a cursor should be automatically varied based upon whether the user is touching the touchscreen with a finger or a stylus.

Such a teaching would not be obvious to one of ordinary skill in the art, as based upon the teaching of each reference (in the context of those teachings) one would not try to apply Dorfman's teachings of touchpads to touchscreens or apply Murphy's teachings of touchscreens with non-touchscreen teachings of Dorfman. No explicit or implicit teachings to make this modification is present in either reference, implicit teachings being defined by MPEP 2143.01 (The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, **and the nature of the problem to be solved as a whole** would have suggested to those of ordinary skill in the art).

Accordingly, the rejections to claims 5 and 16 under 35 U.S.C. § 103(a) based upon Dorfman in view of Murphy should be withdrawn, which action is respectfully requested.

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      The Applicants believe that this application is now in full condition for allowance, which action is respectfully requested. The Applicants request that the Examiner call the undersigned if clarification is needed on any matter within this Amendment, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

<div align="center">Respectfully submitted,</div>

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